

OHIO RIVER PARTNERS, LLC

1331 Broad Avenue, Suite 100
Findlay, Ohio 45840

U.E.P.A.
S.E.D.O.

2013 APR -5 PM 12: 12

April 4, 2013

Ms. Melody Stewart
Division of Materials and Waste Management
Ohio Environmental Protection Agency
Southeast District Office
2195 Front Street
Logan, Ohio 43138

**Re: RG Steel Wheeling, LLC Property – Approximately 10 acres, Martins Ferry, Ohio
(See Drawing attached to this Letter as Exhibit A)**

Dear Ms. Stewart:

Ohio River Partners, LLC, an Ohio limited liability company is negotiating with RG Steel Wheeling, LLC, a Delaware limited liability company concerning the purchase by ORP of the above referenced property currently owned by RG (the "RG Site"). RG is one of multiple debtors-in-possession in a jointly administered Chapter 11 Case pending in the U.S. Bankruptcy Court for the District of Delaware (Case No. 12-11661(KJC)).

ORP has commenced its due diligence concerning the RG Site, inclusive of its environmental due diligence. The environmental due diligence included soil and groundwater sampling as documented in the attached report by Civil & Environmental Consultants, Inc. (CEC) dated April 3, 2013.

As indicated in the report, dissolved cadmium was detected in four (4) of the seven (7) groundwater samples. Concentrations of cadmium ranged from 13.6 micrograms per liter to 89.8 micrograms per liter. These four (4) samples are above the Maximum Contaminant Level (MCL) standards for drinking water established by the U.S. EPA and also exceed the Ohio VAP Generic Unrestricted Potable Use Standard.

CEC's report also shows that the groundwater flow was generally to the west-southwest, away from the Martins Ferry Municipal Well Field which is located east/northeast of the RG Site.

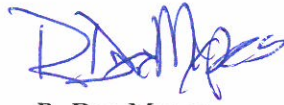
ORP has shared the foregoing information with the Martins Ferry Municipal Water Authority.

Upon acquiring the RG Site, ORP intends to operate the RG Site for a limestone storage, off-loading, and transfer yard. None of ORP's intended uses involve or contain cadmium. ORP also understands and will comply with its use and reporting obligations prescribed by an Environmental Covenant on the RG Site.

Ms. Melody Stewart
Ohio Environmental Protection Agency
April 2, 2013
Page 2

Please call me at (419)424-5662 Ext. 1406 if Ohio EPA has concerns or requires additional information from us relating to the RG Site.

Sincerely,

A handwritten signature in blue ink, appearing to read "R. Dan Mapes". The signature is stylized with a large "R" and a long, sweeping underline.

R. Dan Mapes
Ohio River Partners. LLC.



April 4, 2013

Mr. Robert Mapes
Ohio River Partners, LLC
1331 Broad Avenue, Suite 100
Findlay, Ohio 45840

2013 APR -5 PM 12:12

CEC
S.E.D.O.

Dear Mr. Mapes:

Subject: Soil and Groundwater Sampling Results
Approximately 10-Acre Parcel
North End of Former RG Steel Property
1001 Main Street
Martins Ferry, Ohio
CEC Project 122-509

Pursuant to your request, Civil & Environmental Consultants, Inc. (CEC) performed soil and groundwater sampling as part of Ohio River Partners, LLC's (ORP's) due diligence prior to potential acquisition of an approximately 10-acre parcel of land at the north end of the former RG Steel Wheeling, LLC (RG Steel) plant in Martins Ferry, Ohio. CEC understands that ORP is negotiating with RG Steel concerning purchase of the above-referenced property currently owned by RG Steel (the "10-Acre Parcel"). RG Steel is one of multiple debtors-in-possession in a jointly administered Chapter 11 Case pending in the U.S. Bankruptcy Court for the District of Delaware (Case No. 12-11661(KJC)). The location of the 10-Acre Parcel is depicted on Figure 1.

The work was performed in general conformance with ASTM International (ASTM) E1903-11 *Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process*. The primary objectives of this work were to provide sufficient information regarding subsurface conditions to assist ORP in making informed business decisions concerning the 10-Acre Parcel, and to provide the level of knowledge necessary to satisfy one of the landowner liability protections under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601). As such, the work performed for this effort included performing a series of five (5) soil borings, collecting and analyzing soil samples,

Civil & Environmental Consultants, Inc.

Columbus	8740 Orion Place Suite 100 Columbus, Ohio 43240 Ph: 614/540-6633 / Fx: 614/540-6638 Toll Free: 888/598-6808 columbus@cecinc.com www.cecinc.com	Austin	855/365-2324	Cleveland	866/507-2324	North Central PA	877/321-2324
		Boston	866/312-2024	Detroit	866/380-2324	Phoenix	877/231-2324
		Charlotte	855/859-9932	Export	800/899-3610	Pittsburgh	800/365/2324
		Chicago	877/963-6026	Indianapolis	877/746-0749	St. Louis	866/250-3679
		Cincinnati	800/759-5614	Nashville	800/763-2326	Toledo	888/598-6808



converting one (1) soil boring to a monitoring well, and collecting groundwater samples from the newly-installed monitoring well and six (6) existing monitoring wells as described below. The existing monitoring wells were previously installed by others for purposes of investigating a 1990 release from petroleum underground storage tanks (USTs) in support of a No Further Action (NFA) letter from the Bureau of Underground Storage Tank Regulations (BUSTR). These tanks were located to the south of the 10-acre parcel.

The 10-Acre Parcel is comprised of an irregular-shaped parcel of vacant land located in an industrial portion on the northeast side of Martins Ferry, Ohio. A concrete slab associated with a demolished building, former railroad lines, and scrap concrete/rubble piles are present on the 10-Acre Parcel. The land use in the immediate vicinity of the property consists of an existing limestone yard to the north; a municipal well field to the east; building slabs to the south; and railroad lines to the west. The former RG Steel plant is located immediately south. The City of Martins Ferry Well Field is located approximately 150-feet to the east of the 10-Acre Parcel. The site layout is depicted on Figure 2.

1.0 SCOPE OF WORK

CEC performed the following field activities to complete this work:

- Advancement of five soil borings (SB-4 through SB-7 and MW-21) on the southwestern portion of the 10-Acre Parcel;
- Collection of soil cores continuously in all boring locations and field screening of the soil samples in the field for the presence of total volatile organic compounds (VOCs);
- Laboratory analysis of two soil samples from each soil boring for VOCs, eight Resource Conservation and Recovery Act (RCRA) metals, and Polycyclic Aromatic Hydrocarbons (PAHs) (MW-21 only);
- Installation, development, and sampling of one monitoring well (MW-21) on the southwestern portion of the 10-Acre Parcel; and,
- Collection of groundwater samples from monitoring wells MW-8S, MW-8D, MW-17, MW-19, and MW-20 MW-15 and MW-21 for laboratory analysis of VOCs and RCRA metals. The sample from MW-21 was also analyzed for PAHs.

All work was performed in accordance with industry-accepted practices and following generally accepted quality assurance/quality control (QA/QC) protocol. Samples were analyzed at Pace Analytical Services, Inc. (Pace) in Indianapolis, Indiana. All samples were shipped to the



laboratory in iced coolers under chain-of-custody protocol. Locations of the soil borings and monitoring wells are depicted on Figure 2.

2.0 RESULTS

2.1 Lithology

Lithology encountered during drilling generally consisted of a surficial cinder fill layer underlain by tan to dark brown sandy clay. Directly beneath this layer was 12 to 20 feet of inter-bedded tan, sandy clay, as well as fine-grained sand lenses that varied from moist to wet. At least 22 feet of tan to brown sand and gravel was identified directly beneath this layer. This sand and gravel layer was also moist to wet. Bedrock was not encountered during drilling. Copies of the borehole logs from this investigation are provided in Attachment A.

2.2 Depth to Groundwater and Field Parameters

Groundwater was generally encountered between 28 feet below ground surface to 38 feet bgs. Groundwater level data was collected from the monitoring wells using an electronic water level indicator referenced to the top of the inner PVC casing of the well. The presence of two aquifers was indicated in previous Tier 1 and Tier 2 investigations associated with the BUSTR NFA letter. Groundwater flow in the shallow zone was generally to the west and groundwater flow in the deeper alluvial aquifer was to the west-southwest.

Water level data from this work also indicated a westward component to groundwater flow. This flow direction varies from the anticipated flow, which would be toward the Ohio River. This variation could be due to seasonal variations in groundwater flow or influence due to surface water/groundwater interaction with the Ohio River. Further evaluation of groundwater flow was beyond the scope of this work. Water-level elevation data from this investigation are provided in Table 1. Groundwater flow direction is depicted on Figure 3.

Field parameters including temperature, pH, and conductivity were collected at the time of groundwater sampling. Groundwater temperature was within expected values, ranging from approximately 14.0 degrees Celcius (°C) to 15.9 °C. Conductivity values were also within anticipated values, ranging from approximately 580 to 1785 micromhos per centimeter (umhos/cm). pH values were slightly lower than neutral in four wells (MW-8S, MW-8D, MW-17 and MW-19), with values ranging from approximately 4.32 to 5.63. Copies of groundwater sampling logs are provided in Attachment B.



2.3 Laboratory Analyses

2.3.1 Soil

Soil samples from all of the soil borings except MW-21 were analyzed for VOCs and RCRA metals; soil samples from MW-21 were analyzed for VOCs, RCRA metals and PAHs. Two samples per soil boring were collected. The shallow sample was designated with an “A” (collected at 0 to 2 feet) and the deep sample was designated with a “B” (collected above the water table).

The only VOC detected in the soil samples was carbon disulfide, detected at 0.0146 milligrams per kilograms (mg/kg) in the shallow soil sample collected from MW-21. Carbon sulfide is a common laboratory artifact. Arsenic, barium, chromium and lead were detected in all of the soil samples. Cadmium was detected in three of the soil samples; selenium was detected in only one of the samples, and mercury was detected in two of the samples. Silver was not detected in any of the soil samples. Several PAH compounds were detected in the shallow soil sample collected from MW-21; however there were no PAHs detected in the deeper soil sample from MW-21. All of the results were well below applicable Ohio EPA Voluntary Action Program (Ohio VAP) Generic Direct-Contact Standards for Commercial/Industrial land use. Soil analytical results are summarized in Table 2. Copies of the laboratory analytical reports are provided in Attachment C.

2.3.2 Groundwater

Groundwater samples were collected from seven monitoring wells and analyzed for VOCs and dissolved RCRA metals. MW-21 was sampled for PAHs in addition to VOCs and dissolved RCRA metals. There were no detections of any VOCs in all seven monitoring wells and there were no detections of PAHs in MW-21. Dissolved cadmium was detected in four of the seven groundwater samples (MW-8S, MW-8D, MW-17 and MW-19) [NOTE: these are the four wells which exhibited slightly lower than neutral pH levels – See Section 2.2 above]. Concentrations ranged from 13.6 micrograms per liter ($\mu\text{g/L}$) to 89.8 $\mu\text{g/L}$. These four samples were above the Maximum Contaminant Level (MCL) standards for drinking water established by the U.S. EPA and also exceeded the Ohio VAP Generic Unrestricted Potable Use Standard (UPUS) of 5 $\mu\text{g/L}$. Groundwater analytical results are summarized in Table 3. Copies of the laboratory analytical reports are provided in Attachment C.



3.0 DISCUSSION

Based upon the information generated during this work, the following summarizes results of the investigation:

- Groundwater flow direction is away from the Martins Ferry Municipal Well Field.
- All of the laboratory results from the analyses of the soil samples were below the applicable Ohio VAP generic direct-contact standards.
- No VOCs were detected in any of the groundwater samples.
- PAHs were detected in the shallow soil sample collected and analyzed from MW-21; all of the results were below the applicable Ohio VAP generic direct-contact standards.
- Dissolved cadmium exceeded the Ohio VAP Generic UPUS of 5 µg/L in four of the seven groundwater samples. These four wells also showed pH values slightly lower than neutral.

Further evaluation of the source for the cadmium in the four groundwater samples was beyond the scope of this investigation; however, the following can be inferred based on the data:

- Soil analytical results do not indicate a potential on-site source;
- The westward groundwater flow could indicate a potential source to the east; and
- the lower than neutral pH values associated with the four wells identifying cadmium could influence the elevated concentration of the cadmium in these wells.

4.0 CLOSING

We appreciate the opportunity to provide environmental services to Ohio River Partners. Should you have any questions regarding the information in this report, please don't hesitate to contact us at 614-540-6633.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

A blue ink signature of Mary B. Novak, consisting of a stylized 'M' followed by a wavy line.

Mary B. Novak
Project Scientist

A black ink signature of Andrew G. McCorkle, featuring a series of overlapping loops and a final flourish.

Andrew G. McCorkle, CPG
Principal

Attachments



FIGURES

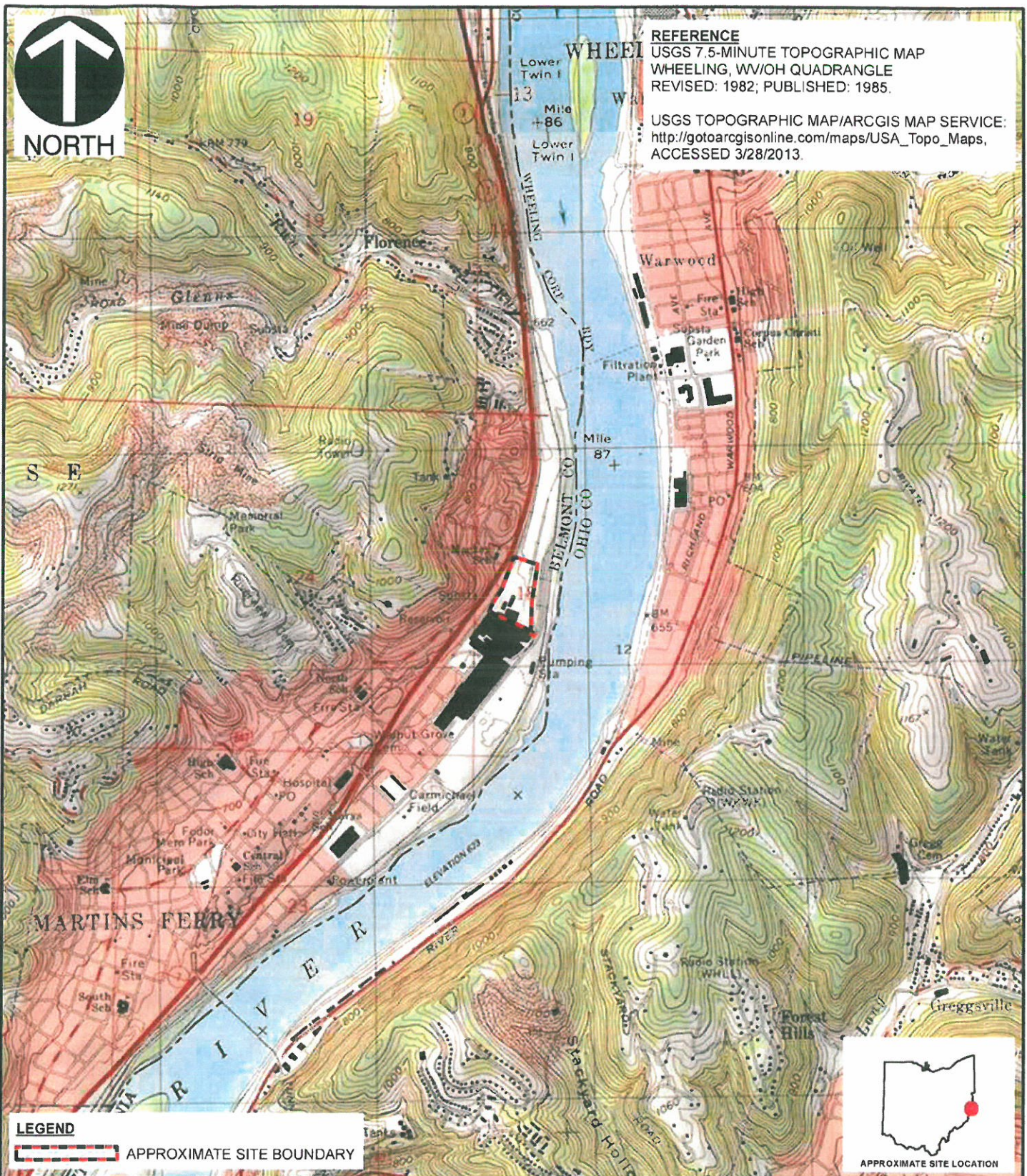


REFERENCE

USGS 7.5-MINUTE TOPOGRAPHIC MAP
WHEELING, WV/OH QUADRANGLE
REVISED: 1982; PUBLISHED: 1985.

USGS TOPOGRAPHIC MAP/ARCGIS MAP SERVICE:
http://gotoarcgisonline.com/maps/USA_Topo_Maps,
ACCESSED 3/28/2013.

P:\2012\122-509-GIS\Task\Task_0003122509-0003_revised_Figure-1.mxd LS: 3/28/2013 2:41:26 PM - L:\Exported 3/28/2013 4:32:41 PM



LEGEND

APPROXIMATE SITE BOUNDARY



Civil & Environmental Consultants, Inc.

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APPROXIMATELY 10-ACRE
FORMER RG STEEL COMPANY SITE
1001 MAIN STREET
MARTIN'S FERRY, BELMONT COUNTY, OHIO

SITE LOCATION MAP

DRAWN BY:	APK/ECP	CHECKED BY:	RJW	APPROVED BY:		FIGURE NO:	1
DATE:	3/28/2013	MAP SCALE:	N.T.S.	PROJECT NO:	122-509.0003		

*Hard signature on file

**NOTES:**

REFERENCE: MICROSOFT VIRTUAL EARTH /BING IMAGERY PROVIDED BY ESRI, ACCESSED 3/28/2013.

GROUNDWATER CONDITIONS:

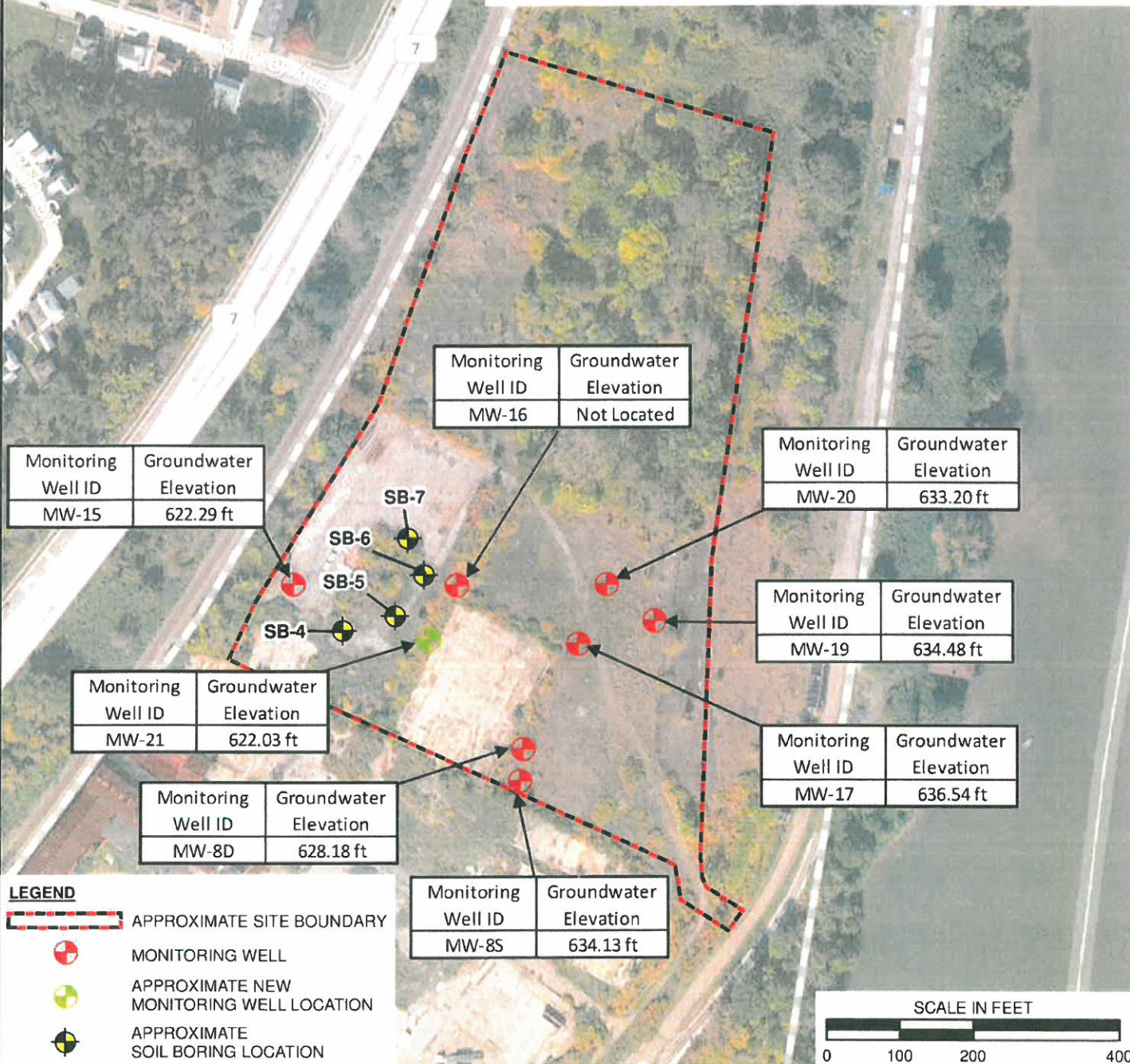
THE WATER LEVELS PRESENT HEREIN ARE APPLICABLE TO THE LOCATION AND TIME OF MEASUREMENT. WATER LEVELS MAY FLUCTUATE THROUGH TIME.

GROUNDWATER SAMPLES WERE COLLECTED ON THE FOLLOWING DATES:

SOIL BORINGS - JANUARY 30, 2013

MONITORING WELLS - JANUARY 29, 2013 (MW-8S, 8D, 17, 19, 20)

MONITORING WELLS - JANUARY 31, 2013 (MW-15, 21)

**Civil & Environmental Consultants, Inc.**

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APPROXIMATELY 10-ACRE
FORMER RG STEEL COMPANY SITE

1001 MAIN STREET

MARTIN'S FERRY, BELMONT COUNTY, OHIO

SITE PLAN AND
GROUNDWATER ELEVATIONS

DRAWN BY:

APK/ECP

CHECKED BY:

RJW

APPROVED BY:

[Signature]

FIGURE NO.:

2

DATE:

3/28/2013

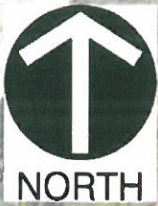
MAP SCALE:

1" = 200'

PROJECT NO:

122-509.0003

*Hand signature on file

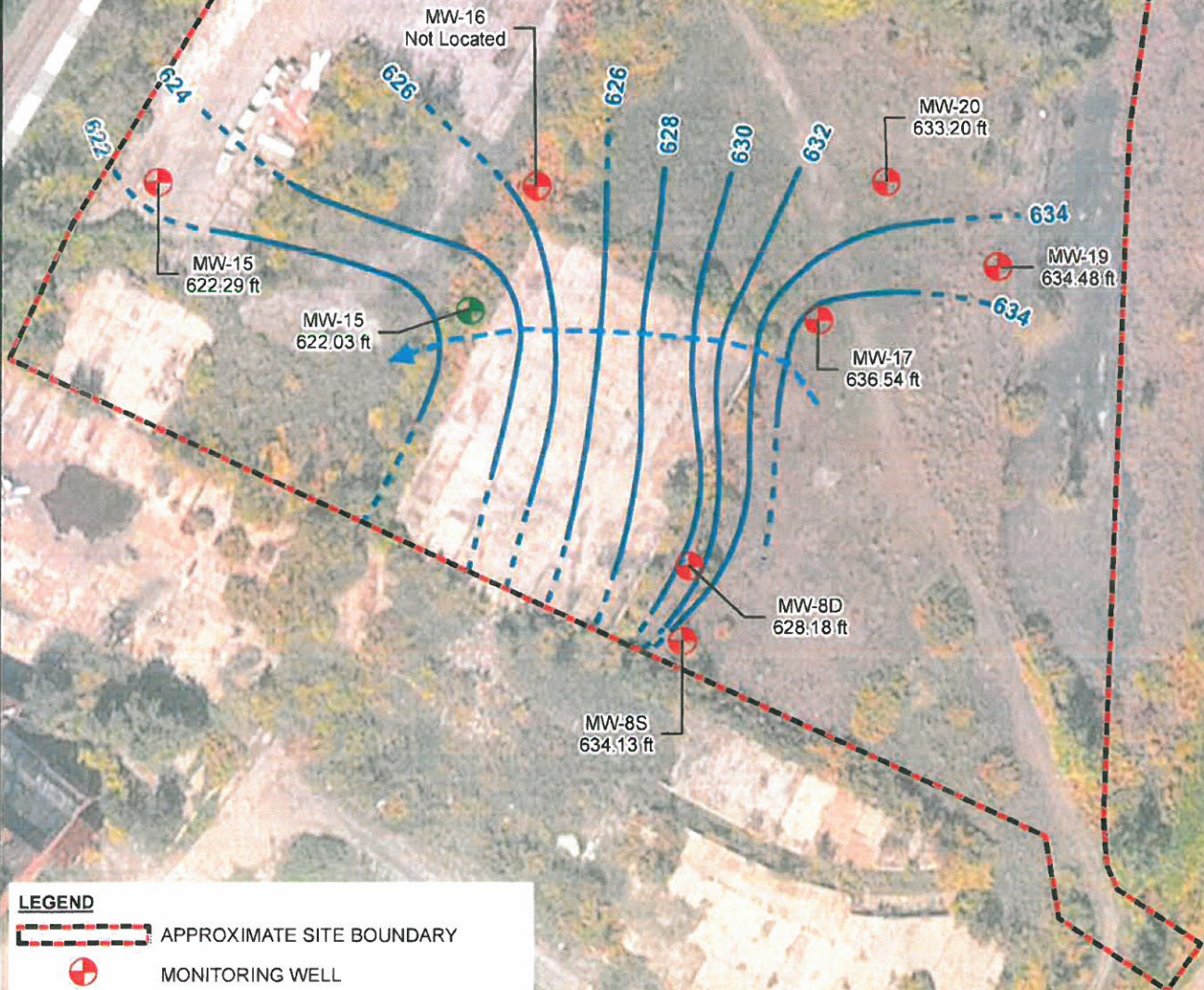
**NOTES:**

REFERENCE: MICROSOFT VIRTUAL EARTH /BING IMAGERY PROVIDED BY ESRI, ACCESSED 3/28/2013.

GROUNDWATER CONDITIONS:

THE WATER LEVELS PRESENT HEREIN ARE APPLICABLE TO THE LOCATION AND TIME OF MEASUREMENT. WATER LEVELS MAY FLUCTUATE THROUGH TIME.

ALL WATER LEVELS WERE MEASURED ON JANUARY 29, 2013, WITH THE EXCEPTION OF MW-21, WHICH WAS MEASURED ON JANUARY 30, 2013.

**LEGEND**

- APPROXIMATE SITE BOUNDARY
- MONITORING WELL
- APPROXIMATE NEW MONITORING WELL LOCATION
- GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW LINE

SCALE IN FEET

**Civil & Environmental Consultants, Inc.**

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APPROXIMATELY 10-ACRE
FORMER RG STEEL COMPANY SITE
1001 MAIN STREET
MARTIN'S FERRY, BELMONT COUNTY, OHIO

GROUNDWATER ELEVATION MAP

DRAWN BY:	APK/ECP	CHECKED BY:	RJW	APPROVED BY:	
DATE:	3/28/2013	MAP SCALE:	1" = 100'	PROJECT NO:	122-509.0003

FIGURE NO.:

3

*Hand signature on file



TABLES

Table 1
Ground Water Elevation Summary
Approximately 10-Acre Former RG Steel Property
CEC Project 122-509

Monitoring Well ID	Top of Casing Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)
MW-8S	661.07	26.94	634.13
MW-8D	660.72	32.54	628.18
MW-15	659.57	37.28	622.29
MW-17	658.07	21.53	636.54
MW-19	660.31	25.83	634.48
MW-20	660.95	27.75	633.20
MW-21	662.17	40.14	622.03

Notes:

All measurements referenced to mean sea level.

Static water level measurements were collected on January 29, 2013 (MW-8S, MW-8D, MW-17, MW-19, and MW-20) and January 31, 2013 (MW-15 and MW-21).

Table 2

Summary of Soil Analytical Results
Approximately 10-Acre Former RG Steel Property
CEC Project 122-509

Parameter	Units	Soil Sample ID and Depth										VAP Cleanup Standards
Collection Date		MW-21A (2')	SB-4A (2')	SB-4B (28')	SB-5A (2')	SB-5B (30')	SB-6A (2')	SB-6B (29')	SB-7A (2')	SB-7B (25')	1/30/13	Commercial/ Industrial Land Use
		1/30/13	1/30/13	1/30/13	1/30/13	1/30/13	1/30/13	1/30/13	1/30/13	1/30/13		
Volatiles Organic Compounds												
Carbon Disulfide	mg/kg	0.0146	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,400
Polycyclic Aromatic Hydrocarbons												
Acenaphthene	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	56,000
Acenaphthylene	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Anthracene	mg/kg	0.126	ND	ND	ND	ND	ND	ND	ND	ND	ND	280,000
Benzo(a)anthracene	mg/kg	0.279	ND	ND	ND	ND	ND	ND	ND	ND	ND	76
Benzo(a)pyrene	mg/kg	0.178	ND	ND	ND	ND	ND	ND	ND	ND	ND	77
Benzo(b)fluoranthene	mg/kg	0.23	ND	ND	ND	ND	ND	ND	ND	ND	ND	77
Benzo(k)fluoranthene	mg/kg	0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Chrysene	mg/kg	0.185	ND	ND	ND	ND	ND	ND	ND	ND	ND	770
Dibenz(a,h)anthracene	mg/kg	0.371	ND	ND	ND	ND	ND	ND	ND	ND	ND	77
Fluoranthene	mg/kg	0.422	ND	ND	ND	ND	ND	ND	ND	ND	ND	7,700
Fluorene	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	370,000
Indeno(1,2,3-cd)pyrene	mg/kg	0.0857	ND	ND	ND	ND	ND	ND	ND	ND	ND	77
2-Methylnaphthalene	mg/kg	5.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Naphthalene	mg/kg	3.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	150
Phenanthrene	mg/kg	1.68	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
Pyrene	mg/kg	0.462	ND	ND	ND	ND	ND	ND	ND	ND	ND	2800
§ RCRA Metals												
Arsenic	mg/kg	39.5	11.7	17.1	24.7	5.6	8.5	9.8	8.1	8.8	82	
Barium	mg/kg	170	243	68.9	129	64.2	97.4	81.5	148	119	370,000	
Cadmium	mg/kg	9.9	ND	ND	ND	4.8	ND	4.2	ND	ND	2,300	
Chromium	mg/kg	48.8	14.0	9.6	14.8	5.3	9.5	8.1	10.2	8.3	7,900	
Lead	mg/kg	868	61.4	9.7	139	5.7	10.2	9.5	28.4	8.3	1,800	
Selenium	mg/kg	ND	ND	ND	2.7	ND	ND	ND	ND	ND	15,000	
Silver	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	15,000	
Mercury	mg/kg	0.42	ND	ND	ND	ND	ND	ND	5.1	ND	290	

Notes:

Values indicated in **BOLD** typeface exceed one or more action levels

NS = No Standard established

-- = Not analyzed for parameter

Table 3
Summary of Groundwater Analytical Results
Approximately 10-Acre Former RG Steel Property
CEC Project 122-509

Parameter	Sample ID							Drinking Water Standards ¹
	MW-8S	MW-8D	MW-15	MW-17	MW-19	MW-20	MW-21	
Collection Date	1/29/2013	1/29/2013	1/31/2013	1/29/2013	1/29/2013	1/29/2013	1/31/2013	
Volatile Organic Compounds (VOCs)								
	ND							
Polycyclic Aromatic Hydrocarbons (PAH)								
	ND							
Dissolved 8 RCRA Metals								
Arsenic, Dissolved	ND	ND	ND	ND	ND	ND	ND	10 ¹
Barium, Dissolved	ND	ND	ND	ND	ND	ND	ND	2000 ¹
Cadmium, Dissolved	13.6	36.0	ND	21.4	89.8	ND	ND	5 ¹
Chromium, Dissolved	ND	ND	ND	ND	ND	ND	ND	100* ¹
Lead, Dissolved	ND	ND	ND	ND	ND	ND	ND	15 ¹
Selenium, Dissolved	10.2	ND	ND	ND	ND	ND	ND	50 ¹
Silver, Dissolved	ND	ND	ND	ND	ND	ND	ND	79 ²
Mercury, Dissolved	ND	ND	ND	ND	ND	ND	ND	2 ¹

Notes:

Values indicated in **BOLD** typeface exceed one or more action levels

¹ = Ohio VAP Generic Unrestricted Potable Use Standard

² = Ohio VAP Risk-Derived Generic Unrestricted Potable Use Standard

ND = Not detected above laboratory detection limit

* Standard for Total Chromium



ATTACHMENT A

BOREHOLE LOGS

 Civil & Environmental Consultants, Inc. Pittsburgh Cincinnati Columbus Nashville Indianapolis 1-800-365-2324		Project Name:		Boring/Well ID: <u>mw-21</u>
		Natural Core		Project No: <u>122-509</u>
		Stone		Page <u>1</u> of <u>2</u>
Date Started: <u>1/30/13</u> Completed: <u>1/30/13</u>		Well Installed: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Drilling Company: <u>Enviro Core</u>		Well Head Stickup: <u>2.0</u> ft. <input checked="" type="checkbox"/> Above <input type="checkbox"/> Below		
Driller: <u>Gray/Wes</u>		Outer Casing:		
CEC Representative: <u>D. F. Hett</u>		Development Method:		
Drilling Method: <u>Geoprobe / 8.25" HSA</u>		Results:		
Bore Hole: <u>8.25"</u> Core Size:		Yield:		
Backfill: <u>Natural Backfill / Broken to Chips / Sand</u>		Surface Protection:		
Air Monitoring Instrument: <u>Mni RAE 3000</u>		Water Levels:		
Casing Elevation:		Open Bore Hole @ Completion: <u>39.2</u>		
Ground Elevation:		Open Bore Hole @ <u>1/30/13</u> Hrs: <u>1106</u>		
Key#:		Well @ Completion: <u>40.75 TOC</u>		
Comments/Problems: <u>Chips 1-33'</u> <u>Screen 35-45'</u> <u>Sand 33'-34'</u> <u>Natural backfill 34'-42'</u> <u>Sand 42'-45'</u> <u>TD=47.10'</u>		Well on <u>1/30/13: 1715</u>		
		Waste Handling (Cuttings, Drilling Fluids, Development Water):		

Sample No. Core Run	Run/Recovery Recovery	Blows Counts RQD	Organic Vapor Reading (ppm)	Depth (feet)	MATERIAL DESCRIPTION AND COMMENTS	Graphic Log	Elevation (feet, msl)	WELL DIAGRAM
1	1.3'		0.0	2	0-4' Gray to dark gray silty clay fill, moist, unconsolidated. collected mid-21A at 2.0'			
2	3.0'		0.0	4	4-8.0' tan sandy clay, moist, soft			
3	2.8'		0.0	8	8-12' grades to fine grained sand, moist. Interbedded tan sandy clay and fine grained sand, dense			
4	2.35'		0.0	12	12-16 SAA			
5	2.3'		0.0	16	16-20 SAA			
				18				

Contact Types:	Abrupt _____	Gradational _____	Boring/Well ID: <u>mw-21</u>
	Irregular or Angular	Estimated _____	Project No: <u>122-509</u>

Sample No. Core Run	Run/Recovery Recovery	Blows Counts RQD	Organic Vapor Reading (ppm)	Depth (feet)	MATERIAL DESCRIPTION AND COMMENTS	Graphic Log	Elevation (feet, msl)	WELL DIAGRAM			
6	2.2		0.0	27	20-23.6 SAA 23.6-24' tan to dark tan sand & gravel moist, gravel subrounded, sand fine-grained, poorly sorted.	0		Δ	Δ		
			0.0	24	24-28 SAA	0				Δ	Δ
7	2.1			26	At 25-25.5 Clay & Gravel seen, wet	0				Δ	Δ
			0.10	28	28-32 SAA	0					(LIV)
8	1.65			30	collected mwt 21 B at 35'	0		Δ	Δ		
9	2.7		0.10	32	32-33 tan to brown, sand, moist, medium grained, well sorted.	0					
				34	medium dense	0					
			0.10	36	33-36' tan to dark tan sand & gravel, moist, gravel subrounded, sand fine grained, poorly sorted	0					
10	1.8			38	41.3-44 Gray sand & gravel, wet poorly sorted.	0					
			0.3	40	40-41.3 SAA	0					
11	2.3			42		0					
12	0.5		0.0	44	44-45 SAA BOD @ 45.0'	0			S-J		

Notes:

Boring/Well ID: mv-21

Project No: 122-509

Project Name National Lime & Stone

Well ID MW-21

Project Number 122-509

Installation Date 1/30/2013

Depths (feet)
-2.0

Descriptions

Bentonite Chips

Sand/Sand Pack
Natural Fill

2" inch ID
PVC Screen

33.0

35.0

45.0

45.0

Notes:

 Civil & Environmental Consultants, Inc. Pittsburgh Cincinnati Columbus Nashville Indianapolis 1-800-365-2324	Project Name:	Boring/ Well ID: SB-4
	National Cement	Project No: 122-509
	Stone	Page 1 of 2
Date Started: 1/30/13 Completed: 1/30/13	Well Installed: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Drilling Company: Enviro Core	Well Head Stickup: ft. <input type="checkbox"/> Above <input type="checkbox"/> Below	
Driller: Craig	Outer Casing:	
CEC Representative D. Follett	Development Method:	
Drilling Method: Geoprobe	Results:	
Bore Hole: 2" Core Size:	Yield:	
Backfill: Bentonite chips	Surface Protection:	
Air Monitoring Instrument: min RAE 3000	Water Levels:	
Casing Elevation:	TOC = Top of Inner Casing	Open Bore Hole @ Completion: Dry
Ground Elevation:	GS = Ground Surface	Open Bore Hole @ 1/30/13 Hrs: 1130
Key#:		Well @ Completion: -
		Well on - / - / -
Comments/Problems:		Waste Handling (Cuttings, Drilling Fluids, Development Water):

Sample No. Core Run	Rin/Recovery Recovery	Blows Counts RQD	Organic Vapor Reading (ppm)	Depth (feet)	MATERIAL DESCRIPTION AND COMMENTS	Graphic Log	Elevation (feet, msl)	WELL DIAGRAM
			0.0		0-1.0 Gray Cinders & Fill, moist loose.	X		
1	2.6			2	1.0-4' tan to dark brown sandy clay slight plastic, moist, soft	X		
			0.0	4	4.0'-8' tan to dark brown sandy clay w/ fine grained interbedded	X		
2	3.3			6	sand lenses, trace organics, moist	X		
			0.0	8	8-12 SAA	X		
3	3.0			10	SB-4A collected at 2.0'	X		
			0.0	12	12-16 SAA	X		
4	2.4			14		X		
			0.0	16	16-20 SAA	X		
5	2.25			18		X		

Contact Types: Abrupt _____
 Irregular or Angular

Gradational _____
 Estimated _____


Boring/Well ID: **SB-4**
 Project No: **122-509**

[illegible]

Notes:

Boring/Well ID: SB-4


Project No: 127-509







 Civil & Environmental Consultants, Inc. Pittsburgh Cincinnati Columbus Nashville Indianapolis 1-800-365-2324	Project Name:	Boring/Well ID: SB-5
	Natural Gas	Project No: 122-509
	Stone	Page 1 of 2
Date Started: 1/30/13 Completed: 1/30/13	Well Installed: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Drilling Company: EnviroCore	Well Head Slickup: ft. <input type="checkbox"/> Above <input type="checkbox"/> Below	
Driller: Craig	Outer Casing:	
CEC Representative D. Follett	Development Method:	
Drilling Method: Geoprobe	Results:	
Bore Hole: 2" Core Size:	Yield:	
Backfill: Bentonite Chips	Surface Protection:	
Air Monitoring Instrument: Min RAE 3000	Water Levels:	
Casing Elevation:	TOC = Top of Inner Casing	Open Bore Hole @ Completion: 1.50'
Ground Elevation:	GS = Ground Surface	Open Bore Hole @ 1/30/13 Hrs: 1250
Key#:		Well @ Completion: —
Comments/Problems:	Well on 1' - 1' - 1' - 1'	
	Waste Handling (Cuttings, Drilling Fluids, Development Water):	

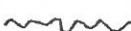

Sample No. Core Run	Run/Recovery Recovery	Blows Counts RQD	Organic Vapor Reading (ppm)	Depth (feet)	MATERIAL DESCRIPTION AND COMMENTS	Graphic Log	Elevation (feet, msl)	WELL DIAGRAM
1	2.2		0.0	2	0-0.7 Gray clinders moist, loose SB-5A taken at 2.0'			
				4	0.7-4.0 tan to brown sandy clay, moist, slightly plastic. 4.0-5.5 SAA			
2	3.2		0.0	6	5.0-8' tan to brown sandy clay w/ interbedded sand, fine grained, moist, chunky bedded, trace organics, sand lens well sorted, well			
3	2.3		0.0	8	8-12 SAA			
				10				
				12	12-16 SAA			
4	2.2		0.0	14				
				16	16-20 SAA			
5	2.3		0.0	18				

Contact Types:	Abrupt <input type="checkbox"/>	Gradational <input type="checkbox"/>	Boring/Well ID: SB-5
	Irregular or Angular <input checked="" type="checkbox"/>	Estimated <input type="checkbox"/>	Project No: 122-509

[illegible]

 Civil & Environmental Consultants, Inc. Pittsburgh Cincinnati Columbus Nashville Indianapolis 1-800-365-2324	Project Name:	Boring/Well ID:
	National Line 4	SB-6
	Stone	Project No: 122-509
		Page 1 of 2
Date Started: 1/30/13 Completed: 1/30/13	Well Installed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Drilling Company: Enviro Core	Well Head Stickup:	ft. <input type="checkbox"/> Above <input type="checkbox"/> Below
Driller: Craig	Outer Casing:	
CEC Representative: D. Fullett	Development Method:	
Drilling Method: Geoprobe	Results:	
Bore Hole: 2" Core Size:	Yield:	
Backfill: Bentonite Chips	Surface Protection:	
Air Monitoring Instrument: w/ RAE 3000	Water Levels:	
Casing Elevation:	TOC = Top of Inner Casing	Open Bore Hole @ Completion: Dry
Ground Elevation:	GS = Ground Surface	Open Bore Hole @ 1/30/13 Hrs: 1155
Key#:		Well @ Completion: —
Comments/Problems:	Well on — 1' — 1' — 1' —	
	Waste Handling (Cuttings, Drilling Fluids, Development Water):	

Sample No. Core Run	Run/Recovery Recovery	Blows Counts RQD	Organic Vapor Reading (ppm)	Depth (feet)	MATERIAL DESCRIPTION AND COMMENTS	Graphic Log	Elevation (feet, msl)	WELL DIAGRAM
1	1.4		0.0	2	0-1' Gray Cinders, loose, moist collected SB-6A at 2.0'			
				4	1.0-4' tan to brown clay, plastic, moist			
2	2.3		0.0	6	4.0-8' tan sandy clay, moist, plastic 8'-9' SAA			
3	2.3		0.0	8	9.0-12' tan to brown sand clay interbeds, sand fine gravel wet, 8-12 SAA			
4	2.3		0.0	12	12-16 SAA			
5	2.3		0.0	16	16-18 SAA			


Contact Types:	Abrupt	Gradational	Boring/Well ID: SB-6
	Irregular or Angular 	Estimated 	Project No: 122-509

[illegible]

Notes:

Boring/Well ID: SB-6

Project No: 122-809

 Civil & Environmental Consultants, Inc. Pittsburgh Cincinnati Columbus Nashville Indianapolis 1-800-365-2324		Project Name:	Boring/Well ID:
		National Line	SB-7
		Store	Project No: 122-509
		Page 1 of 2	
Date Started: 1/30/13 Completed: 1/30/13		Well Installed: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Drilling Company: EnviroCore		Well Head Stickup: ft. <input type="checkbox"/> Above <input type="checkbox"/> Below	
Driller: C. Boig		Outer Casing:	
CEC Representative D. Feltch		Development Method:	
Drilling Method: Geoprobe		Results:	
Bore Hole: 2" Core Size:		Yield:	
Backfill: Bentonite Chips		Surface Protection:	
Air Monitoring Instrument: RH, RAE 3000		Water Levels:	
Casing Elevation:		Open Bore Hole @ Completion: Dry	
Ground Elevation:		Open Bore Hole @ 1/30/13 Hrs: 12.56	
Key#:		Well @ Completion: -	
		Well on - 1' - 1' - 2'	
Comments/Problems:		Waste Handling (Cuttings, Drilling Fluids, Development Water):	

Sample No. Core Run	Run/Recovery Recovery	Blows Counts RQD	Organic Vapor Reading (ppm)	Depth (feet)	MATERIAL DESCRIPTION AND COMMENTS	Graphic Log	Elevation (feet, msl)	WELL DIAGRAM
1	7.8		0.0	2	0-1' Gray clinder, moist, loose			
				4	1'-2' Dark gray to black clinder, moist, loose. Collected SB-7A at 2.0'			
2	3.5		0.0	6	2'-4' tan to brown sandy clay, moist, plastic.			
				8	4'-8' SAA			
3	7.5		0.0	10	8.0'-12' tan to brown interbedded sand & gravel moist, sand fine gravel			
				12	12-16 SAA			
4	7.4		0.0	14				
				16	16-20 SAA			
5	2.4		0.0	18				

Contact Types:	Abrupt	Gradational	Boring/Well ID: SB-7
	Irregular or Angular	Estimated	Project No: 122-509

[illegible]

Notes:

Boring/Well ID:	SB-7
Project No:	122-509



ATTACHMENT B

GROUNDWATER SAMPLING LOGS



GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Client: National Lime & Stone
Date: 1/29/13

CEC Project Number: 122-509
Weather Observations: Sunny 60°F

WELL ID: 85

Casing Diameter: 2" (inches)
Total Depth: 35.88 (feet)
Depth to Water: 26.94 (feet)
Depth to Top of Screen: — (feet)

Water Height in Well: 8.94 (feet)
Water Volume in Well: 1.52 (gallons)
Purge Volume: 4.36 gal. (calculated)
4.75 gal. (removed)

Water Volume Factors	
Diameter	Gallons/Foot
1 inches	0.04
1.5 inches	0.092
2 inches	0.17
3 inches	0.38
4 inches	0.66

Minimum Purge Volume (drawdown)(gal./ft.) + (well screen length)(gal./ft.) = —

Measured using: —
Purged using: Dedicated Bailer/Polypro Rope Grundfos pump/poly tubing Other Disposable bailer
Sampled using: Dedicated Bailer/Polypro Rope Grundfos pump/poly tubing Other Disposable bailer

Field Measurements

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Purging (feet)	Time
15.9	4.32	850	—	0.0	26.94	1252
15.9	4.04	844	—	1.75	27.21	1300
15.7	4.16	842	—	3.25	27.35	1305
15.9	4.06	845	—	4.75	27.17	1311

Field Measurements at Time of Sampling

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Sampling (feet)	Time
15.9	4.32	824	4.46	4.75	26.93	1706

Instrument Calibration

Turbidity	Meter Type <u>Hanna</u>	1.0 NTU std = <u>—</u>	5.42 NTU std = <u>—</u>
		10.0 NTU std = <u>15.0</u>	10.0 NTU std = <u>103</u>
pH/Conductivity	Meter Type <u>Ockton</u>	4.01 std = <u>4.01</u>	750 umhos/cm = <u>750</u>
		7.0 std = <u>6.97</u>	1413 umhos/cm = <u>1412</u>
		10.1 std = <u>10.06</u>	

Physical Properties
Odor: None
Color: clear
Turbidity: low

Analysis Required: DOC 8260 / Dissolved 8 RCRA etc 1
Sample time/date: 1/29/13 1700

Comments: —
Deviations from SAP: none

Sampler: Dave Follett Signature: [Signature]



GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Client: Natural Line & Stone

CEC Project Number: 122-509

Date: 1/29/13

Weather Observations: Sunny 60°F

WELL ID: 8D

Casing Diameter: 2" (inches)

Water Height in Well: 20.46 (feet)

Total Depth: 53.0' (feet)

Water Volume in Well: 3.48 (gallons)

Depth to Water: 32.54 (feet)

Purge Volume: 10.41 gal. (calculated)

10.50 gal. (removed)

Depth to Top of Screen: — (feet)

Minimum Purge Volume (drawdown)(gal./ft.) + (well screen length)(gal./ft.) = —

Measured using: —

Purged using: Dedicated Bailor/Polypro Rope

Grundfos pump/poly tubing

Other Disposable bailor

Sampled using: Dedicated Bailor/Polypro Rope

Grundfos pump/poly tubing

Other Disposable bailor

Water Volume Factors	
Diameter	Gallons/Foot
1 inches	0.04
1.5 inches	0.092
2 inches	0.17
3 inches	0.38
4 inches	0.66

Field Measurements

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Purging (feet)	Time
15.7	6.10	939	—	0.0	32.54	1320
15.6	5.27	788	—	2.5	28.72	1339
15.5	4.88	774	—	7.0	40.23	1349
15.6	4.89	763	—	10.5	39.98	1401

Field Measurements at Time of Sampling

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Sampling (feet)	Time
15.7	4.86	76	8.28	10.5	32.75	1715

Instrument Calibration see 8S

Turbidity	Meter Type <u>—</u>	1.0 NTU std = <u>—</u>	5.42 NTU std = <u>—</u>
		10.0 NTU std = <u>—</u>	51.8 NTU std = <u>—</u>
			499 NTU std = <u>—</u>
pH/Conductivity	Meter Type <u>—</u>	4.01 std = <u>—</u>	
		7.0 std = <u>—</u>	1413 umhos/cm = <u>—</u>
		10.1 std = <u>—</u>	

Physical Properties

Odor: None
Color: Clear
Turbidity: low

Analysis Required: UOC 8260 / Dissolved BRCA note 1

Sample time/date: 1715 1/29/13

Comments: —

Deviations from SAP: none

Sampler: Dave Follett

Signature: [Signature]



GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Client: National Lin & Stone

CEC Project Number: 122-509

Date: 1/29/13

Weather Observations: Sunny 60°F

WELL ID: 17

Casing Diameter: 2" (inches)

Water Height in Well: 8.47 (feet)

Total Depth: 30.10 (feet)

Water Volume in Well: 1.44 (gallons)

Depth to Water: 21.53 (feet)

Purge Volume: 4.32 gal. (calculated)

Depth to Top of Screen: — (feet)

4.50 gal. (removed)

Minimum Purge Volume (drawdown)(gal./ft.) + (well screen length)(gal./ft.) =

Measured using:

Purged using: Dedicated Bailer/Polypro Rope

Grundfos pump/poly tubing

Other Disposable bailer

Sampled using: Dedicated Bailer/Polypro Rope

Grundfos pump/poly tubing

Other Disposable bailer

Water Volume Factors	
Diameter	Gallons/Foot
1 inches	0.04
1.5 inches	0.092
2 inches	0.17
3 inches	0.38
4 inches	0.66

Field Measurements

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Purging (feet)	Time
15.5	5.13	732	—	0.0	21.53	1413
15.3	5.51	740	—	1.5	21.89	1418
15.2	5.60	742	—	3.0	21.85	1427
15.2	5.59	742	—	4.5	21.86	1426

Field Measurements at Time of Sampling

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Sampling (feet)	Time
15.2	5.63	744	13.8	4.5	21.51	1725

Instrument Calibration See 85

Turbidity	Meter Type <u> </u>	1.0 NTU std = <u> </u>	5.42 NTU std = <u> </u>
		10.0 NTU std = <u> </u>	51.8 NTU std = <u> </u>
pH/Conductivity	Meter Type <u> </u>	4.01 std = <u> </u>	499 NTU std = <u> </u>
		7.0 std = <u> </u>	1413 umhos/cm = <u> </u>
		10.1 std = <u> </u>	

Physical Properties

Odor: None
Color: Clear
Turbidity: low

Analysis Required: None 760 / Dissolved 8 RECA note 1

Sample time/date: 1725 1/29/13

Comments:

Deviations from SAP: None

Sampler: Dave Follett

Signature: [Signature]



GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Client: National Line & Store
Date: 1/29/13

CEC Project Number: 122-509
Weather Observations: Sunny 60°F

WELL ID: 19.

Casing Diameter: _____ (inches) Water Height in Well: 15.48 (feet)
Total Depth: 41.31 (feet) Water Volume in Well: 2.64 (gallons)
Depth to Water: 25.83 (feet) Purge Volume: 7.92 gal. (calculated)
Depth to Top of Screen: _____ (feet) 8.00 gal. (removed)
Minimum Purge Volume (drawdown)(gal./ft.) + (well screen length)(gal./ft.) = _____

Water Volume Factors	
Diameter	Gallons/Foot
1 inches	0.04
1.5 inches	0.092
2 inches	0.17
3 inches	0.38
4 inches	0.66

Measured using: _____
Purged using: Dedicated Bailer/Polypro Rope Grundfos pump/poly tubing Other: Disposable bailer
Sampled using: Dedicated Bailer/Polypro Rope Grundfos pump/poly tubing Other: Disposable bailer

Field Measurements

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Purging (feet)	Time
<u>16.2</u>	<u>4.20</u>	<u>561</u>	<u>—</u>	<u>0.0</u>	<u>25.83</u>	<u>1550</u>
<u>15.6</u>	<u>4.08</u>	<u>582</u>	<u>—</u>	<u>2.35</u>	<u>25.98</u>	<u>1600</u>
<u>15.6</u>	<u>4.09</u>	<u>582</u>	<u>—</u>	<u>5.50</u>	<u>26.48</u>	<u>1606</u>
<u>15.6</u>	<u>4.09</u>	<u>583</u>	<u>—</u>	<u>8.00</u>	<u>26.46</u>	<u>1612</u>

Field Measurements at Time of Sampling

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Sampling (feet)	Time
<u>15.4</u>	<u>4.42</u>	<u>575</u>	<u>22.8</u>	<u>6.00</u>	<u>25.59</u>	<u>1735</u>

Instrument Calibration

Turbidity		Meter Type _____	1.0 NTU std = _____	5.42 NTU std = _____
			10.0 NTU std = _____	51.8 NTU std = _____
				499 NTU std = _____
pH/Conductivity		Meter Type _____	4.01 std = _____	
			7.0 std = _____	1413 umhos/cm = _____
			10.1 std = _____	

Physical Properties

Odor: None
Color: Clear
Turbidity: Low

Analysis Required: VOC 8260 / Dissolved 8260 & 8261
Sample time/date: 1/29/13 1735

Comments: _____

Deviations from SAP: None

Sampler: Dave Felleth Signature: [Signature]



GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Client: National Lin & Store

CEC Project Number: 122-509

Date: 1/29/13

Weather Observations: Sunny 60°

WELL ID: 20

Casing Diameter: 2" (inches)

Water Height in Well: 21.0' (feet)

Total Depth: 48.75 (feet)

Water Volume in Well: 3.57 (gallons)

Depth to Water: 27.75 (feet)

Purge Volume: 10.71 gal. (calculated)

10.75 gal. (removed)

Depth to Top of Screen: — (feet)

Minimum Purge Volume (drawdown)(gal./ft.) + (well screen length)(gal./ft.) = —

Measured using: —

Purged using: Dedicated Bailor/Polypro Rope

Grundfos pump/poly tubing

Other Disposable bailor

Sampled using: Dedicated Bailor/Polypro Rope

Grundfos pump/poly tubing

Other Disposable bailor

Water Volume Factors

Diameter	Gallons/Foot
1 inches	0.04
1.5 inches	0.092
2 inches	0.17
3 inches	0.38
4 inches	0.66

Field Measurements

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Purging (feet)	Time
15.2	5.95	734	—	0.0	27.75	1620
14.0	6.16	787	—	3.75	29.25	1628
14.0	6.21	789	—	7.25	29.76	1635
14.0	6.19	790	—	10.75	30.05	1642

Field Measurements at Time of Sampling

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Sampling (feet)	Time
14.5	6.16	779	40.1	10.75	27.76	1745

Instrument Calibration See 85

Turbidity	Meter Type <u>—</u>	1.0 NTU std = <u>—</u>	5.42 NTU std = <u>—</u>
		10.0 NTU std = <u>—</u>	51.8 NTU std = <u>—</u>
			499 NTU std = <u>—</u>
pH/Conductivity	Meter Type <u>—</u>	4.01 std = <u>—</u>	
		7.0 std = <u>—</u>	1413 umhos/cm = <u>—</u>
		10.1 std = <u>—</u>	

Physical Properties

Odor: none

Color: clear

Turbidity: low

Analysis Required: UIC 8160/Dissolved BRCA metals

Sample time/date: 1745 1/29/13

Comments: —

Deviations from SAP: none

Sampler: D. A. Follert

Signature: DE



GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Client: Nation's Lumber Store
Date: 1/31/13

CEC Project Number: 122-509
Weather Observations: Snow 70°F

WELL ID: 15

Casing Diameter: 2" (inches)

Water Height in Well: 10.36 (feet)

Total Depth: 46.70 (feet)

Water Volume in Well: 1.77 (gallons)

Depth to Water: 36.34 (feet)

Purge Volume: 5.31 gal. (calculated)

5.50 gal. (removed)

Depth to Top of Screen: — (feet)

Minimum Purge Volume (drawdown)(gal./ft.) + (well screen length)(gal./ft.) = —

Measured using: —

Purged using: Dedicated Bailor Polypro Rope Grundfos pump/poly tubing

Other Disposable bailer

Sampled using: Dedicated Bailor Polypro Rope Grundfos pump/poly tubing

Other Disposable bailer

Water Volume Factors	
Diameter	Gallons/Foot
1 inches	0.04
1.5 inches	0.092
2 inches	0.17
3 inches	0.38
4 inches	0.66

Field Measurements

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Purging (feet)	Time
13.8	7.66	1265	—	0.50	36.34	0826
14.3	6.97	1229	—	2.0	36.35	0835
14.5	6.79	1140	—	3.75	36.35	0842
14.5	6.78	1178	—	5.50	36.35	0850

Field Measurements at Time of Sampling

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Sampling (feet)	Time
12.4	7.05	1295	47.4	5.50	36.35	1040

Instrument Calibration See MW-21

Turbidity	Meter Type	1.0 NTU std =	5.42 NTU std =
		10.0 NTU std =	51.8 NTU std =
			499 NTU std =
pH/Conductivity	Meter Type	4.01 std =	
		7.0 std =	1413 umhos/cm =
		10.1 std =	

Physical Properties

Odor: None
Color: Clear
Turbidity: Moderate

Analysis Required: VOC 8269 8 RCM Anion/ Dissolved

Sample time/date: 1040 1/31/13

Comments: —

Deviations from SAP: None

Sampler: Dore Follett

Signature: D. St



GROUND WATER MONITORING WELL SAMPLING FIELD DATA SHEET

Client: National Lead State
Date: 1/31/13

CEC Project Number: 122-509
Weather Observations: Snow 30°

WELL ID: MW-21

Casing Diameter: 2" (inches)

Water Height in Well: 6.96' (feet)

Total Depth: 47.10 (feet)

Water Volume in Well: 1.19 (gallons)

Depth to Water: 40.14 (feet)

Purge Volume: 3.57 gal. (calculated)

Depth to Top of Screen: — (feet)

3.75 gal. (removed)

Minimum Purge Volume (drawdown)(gal./ft.) + (well screen length)(gal./ft.) =

Measured using:

Purged using: Dedicated Bailers Polypro Rope Grundfos pump/poly tubing Other Disposable bailer

Sampled using: Dedicated Bailers Polypro Rope Grundfos pump/poly tubing Other Disposable bailer

Water Volume Factors	
Diameter	Gallons/Foot
1 inches	0.04
1.5 inches	0.092
2 inches	0.17
3 inches	0.38
4 inches	0.66

Field Measurements

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Purging (feet)	Time
15.6	6.64	1586	—	0.0	40.14	752
15.7	6.63	1652	—	1.25	40.18	758
15.8	6.62	1637	—	2.50	40.16	806
15.9	6.62	1680	—	3.75	40.15	812

Field Measurements at Time of Sampling

Temperature (degrees C)	pH (s.u.)	Conductivity (umhos/cm)	Turbidity (NTU)	Volume (gallons)	Water Level During Sampling (feet)	Time
15.5	6.81	1785	170	3.75	39.9	1100

Instrument Calibration

Turbidity	Meter Type <u>Hanna</u>	1.0 NTU std = <u> </u>	5.42 NTU std = <u> </u>
		10.0 NTU std = <u>15.0</u>	10.8 NTU std = <u>103</u>
pH/Conductivity	Meter Type <u>Oakton</u>	15.0 std = <u> </u>	100 NTU std = <u>750</u>
		4.01 std = <u>4.01</u>	750 NTU std = <u> </u>
		7.0 std = <u>7.0</u>	1413 umhos/cm = <u>1410</u>
		10.1 std = <u>10.03</u>	

Physical Properties

Odor: None
Color: clear
Turbidity: moderate

Analysis Required: VOCE 8260
SPCRA Dissolved metals / PAH 8270
Sample time/date: 1/31/13 1100

Comments:

Deviations from SAP: None

Sampler: Don F. Helt

Signature: [Signature]

$$\begin{array}{r} 15.0 = 15.0 \\ 100 = 103 \\ 750 = 750 \end{array}$$


Bokan Cal
PHY 40 = 4.01
70 = 6.7
20.01 = 10.01

Cad
14135 = 1412LS

Well # MV-21

Well #	110
Diameter (in):	2
Initial Static DTW (ft):	40.75
Total Depth (ft):	47.10
Casing Volume (g):	1.02

Date: 1/30/13
Developed By: D. J. McEl
Purge Method: Disposable Bailor / Grundfos
Total Gallons Removed: 5.0
Well Volumes Removed: 4.63

[illegible]



ATTACHMENT C

LABORATORY ANALYTICAL REORTS

February 11, 2013

Mr. Andy McCorkle
Civil & Environmental Consulta
8740 Orion Place
Columbus, OH 43240

RE: Project: 122-509
Pace Project No.: 5075632

Dear Mr. McCorkle:

Enclosed are the analytical results for sample(s) received by the laboratory on February 01, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Donna Spyker

donna.spyker@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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Columbus, OH 43215

(614)486-5421

Pace Analytical Services, Inc.

7726 Moller Road

Indianapolis, IN 46268

(317)875-5894

CERTIFICATIONS

Project: 122-509

Pace Project No.: 5075632

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268

Illinois Certification #: 200074

Indiana Certification #: C-49-06

Kansas Certification #: E-10247

Kentucky Certification #: 0042

Louisiana/NELAC Certification #: 04076

Ohio VAP Certification #: CL0065

Pennsylvania Certification #: 68-04991

West Virginia Certification #: 330

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 122-509
Pace Project No.: 5075632

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5075632001	15	Water	01/31/13 10:40	02/01/13 11:40
5075632002	MW-21	Water	01/31/13 11:00	02/01/13 11:40

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SAMPLE ANALYTE COUNT

Project: 122-509
Pace Project No.: 5075632

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5075632001	15	EPA 6010	FRW	7
		EPA 7470	LLB	1
		EPA 8260	GRM	67
5075632002	MW-21	EPA 6010	FRW	7
		EPA 7470	LLB	1
		EPA 8270 by SIM LVE	CEM	19
		EPA 8260	GRM	67

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 122-509
Pace Project No.: 5075632

Sample: 15		Lab ID: 5075632001	Collected: 01/31/13 10:40		Received: 02/01/13 11:40		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Lab Filtered		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Arsenic, Dissolved	ND ug/L		10.0	1	02/07/13 10:47	02/07/13 11:43	7440-38-2	
Barium, Dissolved	ND ug/L		100	1	02/07/13 10:47	02/07/13 11:43	7440-39-3	
Cadmium, Dissolved	ND ug/L		5.0	1	02/07/13 10:47	02/07/13 11:43	7440-43-9	
Chromium, Dissolved	ND ug/L		10.0	1	02/07/13 10:47	02/07/13 11:43	7440-47-3	
Lead, Dissolved	ND ug/L		5.0	1	02/07/13 10:47	02/07/13 11:43	7439-92-1	
Selenium, Dissolved	ND ug/L		10.0	1	02/07/13 10:47	02/07/13 11:43	7782-49-2	
Silver, Dissolved	ND ug/L		50.0	1	02/07/13 10:47	02/07/13 11:43	7440-22-4	
7470 Mercury, Lab Filtered		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND ug/L		2.0	1	02/06/13 09:58	02/07/13 11:04	7439-97-6	
8260 MSV		Analytical Method: EPA 8260						
1,1,1,2-Tetrachloroethane	ND ug/L		5.0	1		02/07/13 16:13	630-20-6	
1,1,1-Trichloroethane	ND ug/L		5.0	1		02/07/13 16:13	71-55-6	
1,1,2,2-Tetrachloroethane	ND ug/L		5.0	1		02/07/13 16:13	79-34-5	
1,1,2-Trichloroethane	ND ug/L		5.0	1		02/07/13 16:13	79-00-5	
1,1-Dichloroethane	ND ug/L		5.0	1		02/07/13 16:13	75-34-3	
1,1-Dichloroethene	ND ug/L		5.0	1		02/07/13 16:13	75-35-4	
1,1-Dichloropropene	ND ug/L		5.0	1		02/07/13 16:13	563-58-6	
1,2,3-Trichlorobenzene	ND ug/L		5.0	1		02/07/13 16:13	87-61-6	
1,2,4-Trichlorobenzene	ND ug/L		5.0	1		02/07/13 16:13	120-82-1	
1,2,4-Trimethylbenzene	ND ug/L		5.0	1		02/07/13 16:13	95-63-6	
1,2-Dichlorobenzene	ND ug/L		5.0	1		02/07/13 16:13	95-50-1	
1,2-Dichloroethane	ND ug/L		5.0	1		02/07/13 16:13	107-06-2	
1,2-Dichloropropane	ND ug/L		5.0	1		02/07/13 16:13	78-87-5	
1,3,5-Trimethylbenzene	ND ug/L		5.0	1		02/07/13 16:13	108-67-8	
1,3-Dichlorobenzene	ND ug/L		5.0	1		02/07/13 16:13	541-73-1	
1,3-Dichloropropane	ND ug/L		5.0	1		02/07/13 16:13	142-28-9	
1,4-Dichlorobenzene	ND ug/L		5.0	1		02/07/13 16:13	106-46-7	
2,2-Dichloropropane	ND ug/L		5.0	1		02/07/13 16:13	594-20-7	
2-Butanone (MEK)	ND ug/L		25.0	1		02/07/13 16:13	78-93-3	
2-Chlorotoluene	ND ug/L		5.0	1		02/07/13 16:13	95-49-8	
2-Hexanone	ND ug/L		25.0	1		02/07/13 16:13	591-78-6	
4-Chlorotoluene	ND ug/L		5.0	1		02/07/13 16:13	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND ug/L		25.0	1		02/07/13 16:13	108-10-1	
Acetone	ND ug/L		100	1		02/07/13 16:13	67-64-1	
Acrolein	ND ug/L		50.0	1		02/07/13 16:13	107-02-8	
Benzene	ND ug/L		5.0	1		02/07/13 16:13	71-43-2	
Bromobenzene	ND ug/L		5.0	1		02/07/13 16:13	108-86-1	
Bromochloromethane	ND ug/L		5.0	1		02/07/13 16:13	74-97-5	
Bromodichloromethane	ND ug/L		5.0	1		02/07/13 16:13	75-27-4	
Bromoform	ND ug/L		5.0	1		02/07/13 16:13	75-25-2	
Bromomethane	ND ug/L		5.0	1		02/07/13 16:13	74-83-9	
Carbon disulfide	ND ug/L		10.0	1		02/07/13 16:13	75-15-0	
Carbon tetrachloride	ND ug/L		5.0	1		02/07/13 16:13	56-23-5	
Chlorobenzene	ND ug/L		5.0	1		02/07/13 16:13	108-90-7	

Date: 02/11/2013 02:45 PM

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 122-509
Pace Project No.: 5075632

Sample: 15		Lab ID: 5075632001	Collected: 01/31/13 10:40	Received: 02/01/13 11:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260						
Chloroethane	ND	ug/L	5.0	1		02/07/13 16:13	75-00-3	
Chloroform	ND	ug/L	5.0	1		02/07/13 16:13	67-66-3	
Chloromethane	ND	ug/L	5.0	1		02/07/13 16:13	74-87-3	
Dibromochloromethane	ND	ug/L	5.0	1		02/07/13 16:13	124-48-1	
Dibromomethane	ND	ug/L	5.0	1		02/07/13 16:13	74-95-3	
Dichlorodifluoromethane	ND	ug/L	5.0	1		02/07/13 16:13	75-71-8	
Ethyl methacrylate	ND	ug/L	100	1		02/07/13 16:13	97-63-2	
Ethylbenzene	ND	ug/L	5.0	1		02/07/13 16:13	100-41-4	
Iodomethane	ND	ug/L	10.0	1		02/07/13 16:13	74-88-4	
Isopropylbenzene (Cumene)	ND	ug/L	5.0	1		02/07/13 16:13	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	4.0	1		02/07/13 16:13	1634-04-4	
Methylene Chloride	ND	ug/L	5.0	1		02/07/13 16:13	75-09-2	
Styrene	ND	ug/L	5.0	1		02/07/13 16:13	100-42-5	
Tetrachloroethene	ND	ug/L	5.0	1		02/07/13 16:13	127-18-4	
Toluene	ND	ug/L	5.0	1		02/07/13 16:13	108-88-3	
Trichloroethene	ND	ug/L	5.0	1		02/07/13 16:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	1		02/07/13 16:13	75-69-4	
Vinyl acetate	ND	ug/L	50.0	1		02/07/13 16:13	108-05-4	
Vinyl chloride	ND	ug/L	2.0	1		02/07/13 16:13	75-01-4	
Xylene (Total)	ND	ug/L	10.0	1		02/07/13 16:13	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		02/07/13 16:13	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	5.0	1		02/07/13 16:13	10061-01-5	
n-Butylbenzene	ND	ug/L	5.0	1		02/07/13 16:13	104-51-8	
n-Propylbenzene	ND	ug/L	5.0	1		02/07/13 16:13	103-65-1	
p-Isopropyltoluene	ND	ug/L	5.0	1		02/07/13 16:13	99-87-6	
sec-Butylbenzene	ND	ug/L	5.0	1		02/07/13 16:13	135-98-8	
tert-Butylbenzene	ND	ug/L	5.0	1		02/07/13 16:13	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		02/07/13 16:13	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	1		02/07/13 16:13	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	100	1		02/07/13 16:13	110-57-6	
Surrogates								
Dibromofluoromethane (S)	109 %		83-123	1		02/07/13 16:13	1868-53-7	
4-Bromofluorobenzene (S)	103 %		72-125	1		02/07/13 16:13	460-00-4	
Toluene-d8 (S)	104 %		81-114	1		02/07/13 16:13	2037-26-5	